transit time by DA-6886 was inhibited by GR113808, a 5-HT4 receptor antagonist. Conclusions: These results suggest that DA-6886 increases colonic motility through the 5-HT4 receptor activation in conscious guinea pigs and may be useful for constipation in patients with colonic motility dysfunction.

Sa2026

Small Intestinal Fungal Overgrowth (SIFO): A Cause of Gastrointestinal Symptoms

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Background: Fungi may colonize the small intestine and may be pathogenic and/or cause GI symptoms. In one study, 27% of patients with unexplained GI symptoms had SIFO (Jacobs et al). Whether SIFO causes symptoms and whether symptom profiles differ between those with or without SIFO is unknown. Our aim was to determine the presence of fungal overgrowth in patients with unexplained GI symptoms and to compare the symptom profiles of SIFO +ve and -ve patients. Methods: Patients with chronic gastrointestinal (GI) symptoms and negative endoscopy and computerized abdominal tomography (CAT) scan referred to motility center, underwent duodenal aspiration/culture. Under aseptic precautions, 3mL of duodenal juice was aspirated from the 3rd/4th parts of duodenum during esophagogastroduodenoscopy by using a 2mm Liguory catheter and cultured for fungi. Patients scored the frequency, intensity and duration of abdominal pain, belching, bloating, fullness, indigestion, nausea, diarrhea, vomiting, gas for previous 2 weeks on a Likert-like scale from 0-3 (frequency: 0=none, 1= <1 episode/wk, 2= 1 episode/wk, 3= >1 episode/wk. intensity: 0 = no symptoms, 1 = mild, 2 = moderate, 3 = severe symptom. Duration: 0 = none, 1= <10 min., 2= >30 min.). Mann-Whitney U test was used to compare symptom scores of SIFO +ve vs SIFO -ve patients. Results: 150 patients (F/M=117/33), mean age 47 years, and symptom duration of >6 months were enrolled. Duodenal culture yielded a positive fungal culture in 25.3% (38/150) patients. 37 (97.4%) were *Candida* spp.; 31 (83.8%) *Candida Albicans*, 6 (16.2%) *Candida Glabrata*, and 1 (2.6%) was *Penicillum* spp. 16 (42.1%) grew $\geq 10^2$ CFU/mL, 11 (28.9%) grew $\geq 10^3$ CFU/mL, 4 (10.5%) grew $\geq 10^4$ CFU/mL, and 3 (7.9%) grew $\geq 10^5$ CFU/mL. Predominant symptoms were abdominal pain, bloating, fullness, nausea and gas, but symptom scores were not different between patients with or without SIFO, all p= ns (Table 1). Median total symptom scores were not significantly different in SIFO +ve vs SIFO -ve group; 45.043 vs 46.428 (p=0.651). Conclusion: Approximately 25% of patients with chronic GI symptoms may have SIFO. Symptoms do not appear to differentiate between those with or without SIFO and duodenal culture appears to be the only method of identifying this problem.

Table 1:

	Median symptom scores									
	Abdominal pain	Belching	Bloating	Fullness	Indigestion	Nausea	Diarrhea	Vomiting	Gas	Total score
SIFO+	6.35	4.18	6.60	5.57	4.37	5.63	3.50	3.72	5.76	45.69
SIFO-	6.33	4.62	6.47	6.44	4.80	5.32	4.01	2.50	5.77	46.25
*P*value	0.862	0.405	0.832	0.072	0.603	0.759	0.544	0.075	0.859	0.879

Sa2027

Lubiprostone Decreases Small-Bowel Transit Time and Improves Visualization of the Small Bowel in Capsule Endoscopy: A Double-Blind, Placebo-Controlled 3-Way Crossover Study

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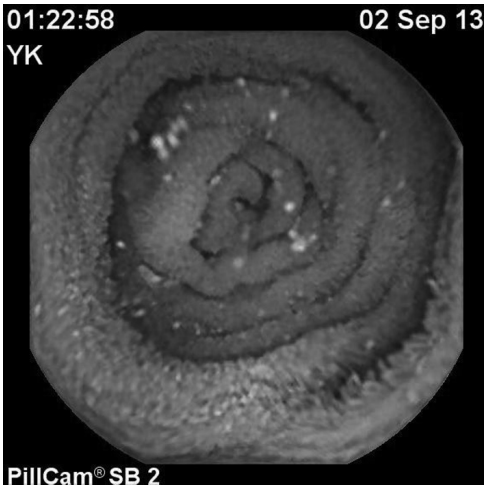
Background: Lubiprostone (Lp) has been reported to have a prokinetic effect. Aim: To investigate the usefulness of Lp both for bowel preparation and as a propulsive agent in small bowel endoscopy. Main Outcome Measures: Gastric transit time (GTT) and small-bowel transit time (SBTT). Secondary Outcome Measures: Adequacy of small-bowel cleansing and the amount of water in the small-bowel. Methods: Six healthy male volunteers participated in this randomized, 3-way crossover study at intervals of >1 week. The study subjects received a 24μg lubiprostone tablet (Lp) 60 minutes before capsule endoscopy (CE) ingestion and a placebo 30 minutes before CE ingestion (L-P group), or a placebo 60 minutes before CE ingestion and Lp 30 minutes before CE ingestion (P-L group), or a placebo 60 minutes before CE ingestion and a placebo 30 minutes before CE ingestion (P-P group). The capsule endoscopic findings were interpreted by 2 independent investigators who were unaware of the study medication received. Anatomic landmarks were identified, and the GTT and SBTT were calculated. The quality of the capsule endoscopic images and the amount of water in the small bowel were assessed by gradation on a 5-point scale. The average scores for 5-min segments of the video were assessed from the time of capsule entry into the proximal duodenum (0% of the SBTT), and evenly spaced for every 10% of the SBTT thereafter, with the final segment recorded in the terminal ileum (100% of the SBTT). The PillCam Small Bowel capsule endoscopy system with the PillCam SB2 capsule and Rapid 5 software platform were used. The study parameters were examined for all the 3 test conditions and compared using the Freidman test. Results: All capsules passed into the small bowel. The median GTT was 22.5 (9-160) minutes in the P-P group, 57.5 (15-78) minutes in the P-L group and 40 (4-122) minutes in the L-P group. The median SBTT was 178.5 (117-407) minutes in the P-P group, 110.5 (11-331) minutes in the P-L group, and 122.5 (27-282) minutes in the L-P group ($p < 0.05$). The median image quality scores were 3 ± 1.35 in the P-P group, 4 ± 0.85 in the P-L group, and 4 ± 0.56 in the L-P group ($p < 0.01$). The median amounts of water in the small bowel were 1 ± 1.65 in the P-P group, 4 ± 1.29 in the P-L group, 4 ±1.64 in the P-P group, P-L group and L-P group ($p < 0.01$). Conclusion: This study showed that use of Lp significantly decreased the SBTT and improved visualization of the small bowel during capsule endoscopy. We also confirmed that Lp was effective for inducing water secretion into the small bowel during capsule endoscopy.



Sa2028

Symptom Burden and Treatment of Patients With Opioid-Induced Constipation (OIC) for Non-Cancer Pain

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Introduction: A prospective hybrid study is ongoing in the United States (US), Canada (CA), Germany, and the United Kingdom (UK) to assess the burden of opioid induced constipation (OIC) among patients with non-cancer pain using a combination of retrospective data abstraction from medical records, a prospective Internet-based patient survey and a physician survey. Data presented here are from the completed baseline patient survey. Objective: To estimate the rate of laxative inadequate response (LIR) and to characterize baseline demographics, clinical characteristics, OIC symptoms, and laxative utilization. Methods: Patients who were on daily opioid therapy for ≥4 weeks for the treatment of chronic non-cancer pain with OIC were recruited from physician offices. This baseline data analysis includes items developed for the patient survey and questions from the Patient Assessment of Constipation Symptoms (PAC-SYM). LIRx1 was defined as having sufficient use of a laxative (at least one or more stool softeners or osmotic, stimulant, saline, rectal, or prescription laxatives ≥ 4 times in past 2 weeks) and inadequate response (defined as < 3 BMs OR ≥ 1 PAC-SYM symptom scored moderate, severe or very severe). LIRx2 was defined as use of at least two laxative agents from different drug classes (≥ 4 times each in past 2 weeks) and inadequate response. Descriptive statistics were used to evaluate outcomes. Results: 617 patients were recruited. 500 (81%) completed the patient baseline questionnaire; 493 (99%) met criteria confirming the presence of OIC (US, 242; CA, 38; Germany, 115; UK, 98). 62% were female, and 85% were white. Chronic lower back and joint pain were the most frequently reported opioid indications (77% and 52% respectively). Mean duration of chronic pain and opioid use were 10 and 6 years, respectively. Patients reported a mean of 1.4 spontaneous bowel movements (BM) on average per week; however, 83% reported wanting to have a BM at least once a day. Most commonly reported symptoms were straining/squeezing to pass BM (83%), BMs too hard (75%), flatulence (69%), incomplete BM (68%), abdominal bloating (69%), painful BM (67%), and abdominal discomfort (64%). 36% of OIC patients reported no laxative use, 24% insufficient laxative use and 40% sufficient laxative use. Most frequently utilized OIC treatments included natural or behavioral therapies (84%); 60% used ≥ 1 over-the-counter laxative; 19% used ≥ 1 prescription laxative. The prevalence of LIRx1 among sufficient laxative users was 94%; 27% met criteria for 2xLIR (Table). Conclusions: At baseline, non-cancer OIC patients highlight substantial unmet needs with 60% of patients either using laxatives insufficiently or not at all, and 94% of those who use them sufficiently have an inadequate response.

Laxative Sufficiency and LIR Status: Overall Sample and by Country

	Overall (N=493)	US (N=242)	CA (N=38)	Germany (N=115)	UK (N=98)
Laxative Sufficiency Last 2 Weeks (N, %)					
Sufficient laxative use	198 (40.2)	88 (36.4)	19 (50.0)	58 (50.4)	33 (33.7)
Insufficient laxative use	118 (23.9)	68 (28.1)	8 (21.1)	24 (20.9)	18 (18.4)
Non-laxative use	177 (35.9)	86 (35.5)	11 (28.9)	33 (28.7)	47 (48.0)
LIR Status Last 2 Weeks (N, %)					
1xLIR status	186 (93.9)	86 (97.7)	16 (84.2)	52 (89.7)	32 (97.0)
2xLIR status	54 (27.3)	28 (31.8)	8 (42.1)	13 (22.4)	5 (15.2)

Sa2029

How Many Segments Are Necessary to Characterize Colonic Transit Time?

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Background & Aims: Measure of colonic transit time (CTT) by using radiopaque markers is a simple exploration of the bowel function. Yet, the colonic clustering was a subjective algorithm, not founded on prior experimentation. The aim of the present study is to describe